

WE CLAIM:

1. A system for generating an electronic model for a dental impression having a common coordinate system, the system comprising:

two scanning apparatus for positioning physical objects within a scanning device when generating an electronic model corresponding to each of the physical objects;

a data processing system for processing the electronic models corresponding to each of the physical objects to possess polygonal mesh representations of the physical objects within a common coordinate system;

wherein the scanning apparatus comprising a scanning base plate module for coupling the scanning apparatus to the scanning device and a physical model plate module to coupling the physical object to the scanning base plate module within a coordinate system of the scanning device

2. The system according to claim 1, wherein the scanning apparatus also comprises a reference point item used to locate a known position on the scanning apparatus to perform data processing operations associated with transforming position location data into the common coordinate system

3. The system according to claim 1, wherein the scanning base plate module comprises an x-axis alignment channel and y-axis alignment channel;

the physical model plate module comprises a plurality of alignment position spheres, the plurality of alignment spheres are coupled to the x-axis alignment channel and the y-axis alignment channel to position the physical model plate module at a known location relative to the scanning base plate module.

4. The system according to claim 1, wherein the reference point item corresponds to one of the plurality of alignment spheres.

5. The system according to claim 1, wherein the two scanning apparatus are combined into a composite scanning apparatus in which the two corresponding physical objects are positioned relative to each other at a desired position, one of the two scanning apparatus being coupled to the scanning device and the other of the two scanning apparatus being positioned within space of the scanning device according to the common coordinate system.

6. A method for generating an electronic model for a dental impression having a common coordinate system, the method comprising:

mounting physical models onto corresponding scanning apparatus, the scanning apparatus positioning the physical models within a coordinate system of a scanning device;

generating an electronic model for each physical model, the electronic models corresponding to polygonal mesh representations of scanned position data;

positioning each of the scanning apparatus into a desired position in which the physical models are positioned relative to each other as the objects corresponding to the physical models interact with each other to generate a composite scanning apparatus;

scanning a reference point on one or more scanning apparatus within the combined scanning apparatus that are not coupled to the scanning device; and

transforming the electronic models corresponding to the objects having scanning apparatus not coupled to the scanning device to generate a composite electronic model in a common coordinate system.

7. The method according to claim 6 wherein the method further comprises generating a position transformation vector using the scanned reference point data, the position transformation vector being used to transform the electronic models into a common coordinate system.